

XLIII.—*Notes on the Natural History of East Finmark.* By  
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 F.L.S.

[Concluded from vol. xii. p. 417.]

THE delay which has taken place in the conclusion of these notes has arisen from two or three minute Cœlenterata which I was unable to identify and which required a good deal of working out. Pressure of other work has prevented this being done, and as the other species of Cœlenterata were neither numerous nor for the most part rare, I have now thought it best to omit the Cœlenterata altogether, and to no longer delay the printing of the notes on Foraminifera and on Botany which have been so long awaiting publication.

#### FORAMINIFERA.

*Astrorhiza limicola*, Sandahl.

*Psammosphæra fusca*, E. Schulze.

*Hyperammia subnodosa*, H. Brady.

*Rhabdammina discreta*, H. Brady.

*Haplophragmium latidorsatum*, Borneman.

— *globigeriniforme*, Parker & Jones.

— *glomeratum*, H. Brady.

— *canariense*, d'Orbigny.

— *crassimargo*, Norman, nom. nov. Brady, 'Challenger' Foram. p. 310, pl. xxxv. fig. 4; Goës, "Synopsis Arctic and Scandinavian Recent Marine Foraminifera" (Kongl. Svenska Vet.-Akad. Handl. vol. xxv. 1894, p. 21, pl. v. figs. 92-94). A larger and much more tumid form than *canariense*, and the two are quite distinct when found living in company.

*Reophax fusiformis*, Williamson.

*Hippocrepina indivisa*, Parker.

*Trochammia squamata*, Parker & Jones.

*Ammodiscus incertus*, d'Orbigny.

— *charoides*, Jones & Parker.

*Webbina hemisphærica*, Jones, Parker, & Brady.

*Spiroplecta biformis*, Parker & Jones.

*Valvulina conica*, Parker & Jones.

*Cassidulina lævigata*, d'Orbigny.

— *crassa*, d'Orbigny.

*Bulimina pyrula*, d'Orbigny.

— *arctica*, d'Orbigny.

— *elegans*, d'Orbigny.

— *fusiformis*, Williamson.

*Virgulina Schreibersiana*, Czjzek.

*Bolivina punctata*, d'Orbigny.

— *plicata* (d'Orb.), Brady.

*Uvigerina angulosa*, Williamson.

— *tenuistriata*, Reuss.

*Polymorphina problema*, d'Orbigny.

— *rotundata*, Borneman.

— *compressa*, d'Orbigny.

— *amygdaloides* (Reuss), Brady.

— *gibba*, d'Orbigny.

*Cristallaria crepidula*, Fichtel & Moll.

*Nodosaria soluta*, Reuss.

— *levigata*, d'Orbigny.

— *acuminata*, Reuss (= *Psecadium acuminatum*, Reuss). A produced form of *N. levigata* with oblique suture (see Schlicht, 'Foram. des Septentrionthones von Pietzpuhl,' 1870, pl. xxv. figs. 1-10).

— *communis*, var. *Verneullii*, d'Orbigny.

— *calomorpha*, Reuss.

— *pauperata*, d'Orbigny. The specimens thus named are from the Varanger and Bög Fiords. Dr. H. B. Brady examined them and called them "*radicula* running into *N. brevis*," but they exactly correspond to the Greenland form assigned by Goës to *N. pauperata* as "*megalosphærica*," and figured by him (*l. c.* pl. xii. figs. 677-683).

*Lagena globosa*, Walker & Jacob.

— *lævis*, Montagu.

— *striata*, d'Orbigny.

— *distoma*, Parker & Jones.

— *lineata*, Williamson.

— *semilineata*, J. Wright.

— *costata*, Williamson.

— —, forma *acuticosta*, Reuss.

— *finmarchica*, sp. n. This is a very beautiful *Lagena* belonging to the *striato-punctata* group, having a form not unlike that species and with the same very slender neck. It is larger than any specimen of *striato-punctata* that I have seen. Its marked character consists in the costæ, which are each composed of three very distinct riblets, while the puncta, instead of being

on the costæ, are between them, as in *L. Fieldingiana*. A single specimen was taken at Vadsö, near the entrance to the harbour, in 10–25 fathoms.

*Lagena squamosa*, Montagu.

— *hexagona*, Williamson.

— *lævigata*, Reuss.

— *lagenoides*, Williamson.

— *Orbigniana*, Sequenza.

— *pulchella*, H. B. Brady.

*Globigerina bulloides*, d'Orbigny.

*Pullenia sphaeroides*, d'Orbigny.

*Truncatulina lobatula*, Walker & Jacob.

*Patellina corrugata*, Williamson.

*Pulvinulina Karsteni*, Reuss.

— *exigua*, H. B. Brady.

*Polystomella striato-punctata*, Fichtel & Moll.

*Nonionima umbilicata*, Montagu.

— *depressula*, Walker & Jacob.

— *stellijera*, d'Orbigny.

— *scapha*, Fichtel & Moll.

— *turgida*, Williams.

— *communis*, d'Orbigny. This approaches very closely to *N. turgida* in general characters, but instead of being very tumid, as in that species, it is as compressed as *N. scapha*. Dr. H. B. Brady saw my specimens, and referred them to *N. communis*, d'Orbigny (For. Foss. Vien. p. 108, pl. v. figs. 7, 8). It was taken on the same ground as *N. turgida*, and was distinguishable at a glance; nor could I find any intermediate forms.

*Operculina ammonoides*, Gronovius.

*Miliolina tricarinata*, d'Orbigny.

— *trigonula*, Lamarck.

— *seminulum*, Linné.

— *subrotunda*, Walker & Boys.

*Biloculina ringens*, Lamarck.

## BOTANY.

Dredging or shore-collecting every day, and on arriving at home the sorting and preserving of the captures, left little time for botanizing. Still some was made. In the middle of the day we always landed at some new spot, and after a hurried luncheon Schneider and myself set off to explore

the neighbouring ground while the boatmen were finishing their dinner, resting, and smoking. Thus three quarters of an hour was spent by him in entomologizing, by myself in botanizing. Then at night, again, between 9 and 12 P.M. he was often busy with his net while I was plant-hunting. On Sundays a longer ramble was taken, during which many good plants were found. Still no ground was examined which was further than a mile from the shores; but had excursions been made inland among the copses and on the hills, the list of plants here given would have no doubt been considerably extended. It was a great treat to explore an Arctic flora so different in many respects from our own, represented by so many of our Alpine forms and yet including so many other beautiful species. The rarest plant I found was *Arenaria lateriflora*, of which I believe the only European habitat is near the falls of the Pasvic River, and as Herr Schneider was aware of this fact we did not lose the opportunity of seeking it. *Dianthus superbus* is a lovely pink, which was in full flower, ornamenting the cliffs on the eastern side of one of the fiords on the north coast which we passed in the steamer; but I have forgotten which fiord it was. Among the other more beautiful plants new to me were the various species of the families Polemoniaceæ and Ericaceæ. Striking among the latter were the bushes of the Arctic *Ledum palustre*, the delicious scent of which perfumed the air for a considerable distance from the bog in which the plants were growing.

In this high latitude, of course, large numbers of those found in the temperate climate of our islands are absent; for instance, it may interest some reader who knows nothing of the geographical distribution of plants to mention a few of the familiar friends which he must not expect to meet with so far north. There are no such shrubs as holly, ivy, honeysuckle, dog-rose (of any British species), blackberry (*Rubus fruticosus*), gorse, or broom. There is no common daisy\*, celandine (*Ranunculus ficaria*), sweet violet, primrose, cowslip, bluebell†, wood-anemone, or foxglove; the only clovers are *Trifolium repens* and *pratensis*; the only *Campanula* is *C. rotundifolia*; there are no English poppies; while *Geranium pratense* and the whole of the annual species of that genus are absent.

Of garden weeds the common groundsel would seem to be scarce, for I failed to find it in weedy gardens which I examined, and no other species of *Senecio* occurs.

\* *Bellis perennis* is confined to quite the southern part of Norway.

† *Scilla nutans* is not found in Norway at all.

There are no bindweeds (*Convolvulus*), no sow-thistles (*Sonchus*), no annual species of *Veronica*, and the only *Chenopodium* is *C. album*; and the common thistles of our fields—*Carduus nutans*, *acanthoides*, *lanccolatus*, and *arvensis*—are not to be found.

The rapidity of growth which takes place in Arctic regions cannot fail to strike the stranger as truly wonderful. A spot, barren and brown when first seen, will a fortnight later be vivid with green clothing and bright with flowers and waving rushes and grasses. But the healthiness and vigour of plants grown in pots within doors struck me as still more remarkable. At the furthest and darkest corners of rooms, where in England they would at once pine and die, they flourish and flower as vigorously as they would with us when grown in a sunny south window. This is no doubt accounted for by the fact that in the comparatively dark corners they receive during the twenty to twenty-four hours of daylight as much invigorating stimulus as they would do in England when subjected to a much stronger light in our shorter days. In the long rest of the winter darkness plants no doubt also lay up a force of strength ready to burst forth at the first awakening from their sleep.

In 1860 Sir Joseph D. Hooker published, in *Trans. Linn. Soc.* vol. xxiii. pp. 251-348, an exhaustive paper, "Outlines of Distribution of Arctic Plants." He there estimates the total number of flowering plants found within the circumpolar Arctic circle to be 762 species. Of these he gives no less than 616 as occurring in Arctic Europe, 586 of which he regards as of Scandinavian origin, and the small remaining 30 as of American or Asiatic origin. Zoologists no longer regard the Arctic Circle as the boundary of the Arctic fauna, but take an isothermal line. Now if we take as our isothermal line that which indicates an average temperature throughout the year of the freezing-point, 32° Fahr., we shall find that the whole of Western, by far the larger part of Central, and all Northern Norway except the extreme north-east, where I was working, have a higher temperature. With such a boundary a very large number of the species regarded by Hooker as Arctic would be excluded. On the other hand, if the same isothermal line be followed across America and Asia, it will be found very far south of the Arctic Circle in America, passing about 50° W. through the most southern extremity of Hudson's Bay, and in Asia, in about the same latitude, crossing Lake Baikal. Using, then, this isothermal, it would follow that almost the whole of Norway would be excluded, while in America and Asia vast regions

would be added. An estimation of the flora of such regions would give extremely different figures from those given by Hooker relating to plants found north of the arbitrary line of the Arctic Circle irrespective of climatic conditions.

In the voyage homewards from Vadsö to the Lofoten Islands, where I stopped for a few days, I was so fortunate as to find in a fellow-passenger Herr A. Landmark, the Government Inspector of Inland Fishery in Norway, who is a very good botanist. He went through my herbarium, and kindly named for me many plants with which otherwise I should have found much difficulty, *e. g.* the species of *Eriophoron*. He also was so good as to give me several plants which he had collected at Tana and Nyborg, and which I have included in the following lists. In England I am much indebted to the kindness of two specialists who determined for me the difficult *Salices* and the *Carices* and allies, Dr. F. Buchanan White having examined the former and Mr. Arthur Bennett the latter.

In the following list I have indicated the exact localities where the plants were procured by the use of initial letters, as below :—

- B. Bög Fiord (on or near the shores of).
- K. Klosterelv Fiord (on or near the shores of).
- L. Lang Fiord (on or near the shores of).
- N. Nyborg (*Herr Landmark*).
- P. Elvenes and Pasvic River.
- S. Kirkenes and its neighbourhood in Sydvaranger.
- T. Tana (*Herr Landmark*).
- V. Vadsö and Nordvaranger.

The nomenclature of species in the following list is that of C. J. Hartman's 'Handbok i Skandinaviens Flora,' but I have not adopted his arrangement of families, which is that of Fries, but have followed that which is better known to English botanists.

#### RANUNCULACEÆ.

Ranunculus lapponicus, <i>Lin.</i> P.		Thalictrum kemense, <i>Fr.</i> T.
— hyperboreus, <i>Rottb.</i> V., N.		Caltha palustris, <i>Lin.</i> V.
— acris, <i>Lin.</i> V.		Trollius europæus, <i>Lin.</i> V.

#### CRUCIFERÆ.

Cardamine pratensis, <i>Lin.</i>		Draba incana, <i>Lin.</i> V., S.
Capsella bursa-pastoris, <i>Lin.</i>		— hirta, <i>Lin.</i> T.
Cochlearia officinalis, <i>Lin.</i>		

## VIOLACEÆ.

*Viola suecica*, Fr. V., N. | *Viola biflora*, Lin. V.

## DROSERACEÆ.

*Drosera rotundifolia*, Lin. | *Drosera longifolia*, Lin.

## CARYOPHYLLACEÆ.

<i>Silene acaulis</i> , Lin.		<i>Stellaria humifusa</i> , Roth. L.
<i>Melandrium sylvestre</i> , Röhl,		— <i>alpestris</i> , Fr. L.
var. <i>alpestre</i> , Fr. T.		<i>Cerastium alpinum</i> , Lin.
<i>Dianthus superbus</i> , Lin.		— <i>triviale</i> , Link. P.
<i>Stellaria nemorum</i> , Lin. S.		<i>Arenaria lateriflora</i> , Lin. P.
— <i>media</i> , Lin. S.		<i>Helianthus peplodes</i> , Lin. S.
— <i>uliginosa</i> , Murr. V.		<i>Sagina nivalis</i> , Lindbl. T.
— <i>crassifolia</i> , Ehrh. S.		— <i>saxatilis</i> , Wimm. S.

## GERANIACEÆ.

*Geranium sylvaticum*, Lin. V.

## LEGUMINOSÆ.

<i>Lathyrus palustris</i> , Lin. N.		<i>Oxytropis campestris</i> , DC. N.
— <i>maritimus</i> , Fr. S.		<i>Phaca frigida</i> , Lin. N.
<i>Vicia cracca</i> , Lin. S.		<i>Trifolium repens</i> , Lin.
<i>Astragalus alpinus</i> , Lin. N.		

## ROSACEÆ.

<i>Prunus padus</i> , Lin.		<i>Rubus saxatilis</i> , Lin. S., V.
<i>Spiræa ulmaria</i> , Lin. V.		— <i>castoreus</i> , Læst. P.
<i>Alchemilla vulgaris</i> , Lin. V.		— <i>arcticus</i> , Lin. T.
— <i>alpina</i> , Lin. V.		— <i>chamæmorus</i> , Lin. S.
<i>Potentilla anserina</i> , Lin. S.		<i>Geum rivale</i> , Lin.
— <i>verna</i> , Lin. N., P.		<i>Sorbus aucuparia</i> , Gertn. S.
<i>Comarum palustre</i> , Lin. S., V.		

## ONAGRACEÆ.

<i>Epilobium angustifolium</i> , Lin.		<i>Epilobium alpinum</i> , Lin. S.
— <i>palustre</i> , Lin. S.		

## PORTULACÆÆ.

*Montia fontana*, Lin. V.

## SAXIFRAGACEÆ.

<i>Saxifraga stellaris</i> , Lin., var. <i>co-</i>		<i>Saxifraga cæspitosa</i> , Lin. P.
— <i>mosa</i> , Retz. S., V.		<i>Chrysosplenium tetrandrum</i> , Lund.
— <i>nivalis</i> , Lin. V.		V.
— <i>rivularis</i> , Lin. V.		<i>Parnassia palustris</i> , Lin.

## CRASSULACEÆ.

*Rhodiola rosea*, Lin.



UMBELLIFERÆ.

Cerfolium sylvestre, <i>Lin.</i>		Haloscias scotica, <i>Lin.</i> S.
Angelica archangelica, <i>Lin.</i> N.		

CORNACEÆ.

Cornus suecica, *Lin.* V.

CAPRIFOLIACEÆ.

Linnæa borealis, *Lin.* V.

VALERIANACEÆ.

Valeriana officinalis, *Lin.*

COMPOSITÆ.

Matricaria inodora, <i>Lin.</i> S.		Saussurea alpina, <i>DC.</i> S.
Gnaphalium norvegicum, <i>Gumm.</i> P.		Cirsium heterophyllum, <i>All.</i> V., S.
— supinum, <i>Lin.</i> S.		Crepis multicaulis, <i>Ledeb.</i> V.
Antennaria dioica, <i>Gertn.</i> V.		Taraxacum officinale, <i>Lin.</i> S.
Solidago virgaurea, <i>Lin.</i> V.		Hieracium alpinum, <i>Lin.</i> S.
Petasites frigida, <i>Lin.</i> V.		

CAMPANULACEÆ.

Campanula rotundifolia, *Lin.* V.

ERICACEÆ.

Myrtillus nigra, <i>Gilb.</i> S.		Andromeda hypnoides, <i>Lin.</i> V.
— uliginosa, <i>Lin.</i> S.		Calluna vulgaris, <i>Salisb.</i> V.
Oxycoccus palustris, <i>DC.</i> P.		Phylodoce cærulea, <i>Bab.</i> V., S.
— —, var. microcarpus, <i>Turc.</i> S.		Azalea procumbens, V., S.
Vaccinium vitis-idaea, <i>Lin.</i> S.		Ledum palustre, <i>Lin.</i> S.
Arctostaphylos alpina, <i>Spr.</i> V., S.		Pyrola rotundifolia, <i>Lin.</i> V., S.
Andromeda polifolia, <i>Lin.</i> V., S.		— secunda, <i>Lin.</i> K.
		— minor, <i>Lin.</i> S.

GENTIANACEÆ.

Menyanthes trifoliata, *Lin.* V.

POLEMONIACEÆ.

Polemonium pulchellum, <i>Bury.</i>		Diapensia lapponica, <i>Lin.</i> S., V.
— campanulatum, <i>Fries.</i> N.		

BORAGINACEÆ.

Myosotis sylvatica, <i>Ehrb.</i> L.		Stenhammaria maritima, <i>Lin.</i> S.
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SCROPHULARIACEÆ.

Melampyrum sylvaticum, <i>Lin.</i>		Rhinanthus minor, <i>Ehrb.</i> S.
— pratense, <i>Lin.</i> S.		Euphrasia officinalis, <i>Lin.</i> S.
Pedicularis palustris, <i>Lin.</i> B.		Bartsia alpina, <i>Lin.</i> S.
— lapponica, <i>Lin.</i> S., V.		Veronica longifolia, <i>Lin.</i> N.
Sceptrum carolinum, <i>Rudb.</i> S.		— alpina, <i>Lin.</i> V.



## LABIATÆ.

Galeopsis tetralit, *Lin.* S. | Thymus serpyllum, *Lin.* T

## PRIMULACEÆ.

Primula stricta, *Horn.* N. | Trientalis europæa, *Lin.* V.  
 — sibirica, *Jacq.* S.

## LENTIBULARIACEÆ.

Pinguicula vulgaris, *Lin.* V. | Pinguicula villosa, *Lin.* P.  
 — alpina, *Lin.* V.

## PLANTAGINACEÆ.

Plantago major, *Lin.* S. | Plantago maritima, *Lin.* S.

## POLYGONACEÆ.

Polygonum viviparium, *Lin.* P. | Rumex acetosa, *Lin.*  
 — aviculare, *Lin.* S. | — acetosella, *Lin.*  
 Kœningia islandica, *Lin.* V. | Oxyria digyna, *Campb.* V., S.

## EMPETRACEÆ.

Empetrum nigrum, *Lin.*

## URTICACEÆ.

Urtica dioica, *Lin.* S.

## AMENTIFERÆ.

Salix myrtilloides, *Lin.* P. | Salix myrsinites, *Lin.* S.  
 — phlylicifolia, *Lin.* S. | — herbacea, *Lin.* S.  
 — glauca, *Lin.* S. | Betula odorata, *Bechst.* S.  
 — lanata, *Lin.* S. | — nana, *Lin.* V., S.  
 — lapponum, *Lin.* S. | Alnus incana, *Lin.* S.

## CONIFERÆ.

Pinus sylvestris, *Lin.* | Juniperus communis, *Lin.*

## ORCHIDACEÆ.

Orchis maculata, *Lin.* S. | Listera cordata, *R. Br.* N.  
 Cœloglossum viride, *Lin.* S. | Corallorhiza innata, *R. Br.* S.

## ALISMACEÆ.

Triglochin maritimum, *Lin.* K. | Triglochin palustre, *Lin.* S.

## LILIACEÆ.

Allium schœnoprasum, var. sibiricum, *Lin.*

## MELANTHACEÆ.

Tofieldia palustris, *Huds.* V. | Veratrum album, *Reich.* T.

JUNCACEÆ.

Juncus filiformis, <i>Lin.</i> S.		Luzula parviflora, <i>Desv.</i> S.
— trifidus, <i>Lin.</i> S.		— campestris, <i>DC.</i> S.
— biglumis, <i>Lin.</i> S.		— spicata, <i>DC.</i> S.

CYPERACEÆ.

Scirpus cæspitosus, <i>Lin.</i> S.		Carex salina, var. minor, <i>Boott.</i> B.
Eriophorum vaginatum, <i>Lin.</i> S.		— aquatilis, <i>Wahl.</i> S.
— angustifolium, <i>Roth.</i> S.		— Goodenovii, <i>Gay.</i>
— russeolum, <i>Fr.</i> V.		— Persoonii, <i>Sieb.</i> V.
— callithrix, <i>Cham.</i> P.		— vitilis, <i>Fries.</i> S.
— Scheuchzeri, <i>Hoppe.</i> S.		— canescens, <i>Lin.</i> S.
Carex rotundata, <i>Wahl.</i> B.		— tenuiflora, <i>Wahl.</i> P.
— glaucum, <i>Scop.</i> S.		— loliacea, <i>Lin.</i> P.
— capillaris, <i>Lin.</i> S.		— norvegica, <i>Wahl.</i> N.
— limosa, <i>Lin.</i>		— incurva, <i>Lightf.</i> N.
— irrigua, <i>Hoppe.</i> S.		— glareosa, <i>Wahl.</i> N.
— rariflora, <i>Smith.</i> S.		— chordorrhiza, <i>Elorb.</i> V.
— vaginata, <i>Tausch.</i> S.		— capitata, <i>Lin.</i> S.
— alpina, <i>Sv.</i> B.		— dioica, <i>Lin.</i> S.
— salina, <i>Wahl.</i>		

GRAMINEÆ.

Elymus arenarius, <i>Lin.</i> S.		Aira flexuosa, <i>Lin.</i> S.
Festuca rubra, <i>Lin.</i> S.		Alopecurus geniculatus, <i>Lin.</i> V.
Poa trivialis, <i>Lin.</i> S.		Calamagrostis stricta, <i>Nutt.</i> B.
— alpina, <i>Lin.</i> V.		Phleum alpinum, <i>Lin.</i> V., S.
— annua, <i>Lin.</i> S.		Hierochloe borealis, <i>Schrank.</i> B.
Aira cæspitosa, <i>Lin.</i> B.		Anthoxanthum odoratum. S.

EQUISETACEÆ.

Equisetum palustre, <i>Lin.</i>		Equisetum hyemale, <i>Lin.</i> N.
— sylvaticum, <i>Lin.</i>		

FILICES.

Polypodium phegopteris, <i>Lin.</i>		Cystopteris fragilis, <i>Lin.</i>
— dryopteris, <i>Lin.</i>		— montana, <i>Hænke.</i>
Polystichum spinulosum, <i>DC.</i>		

LYCOPODIACEÆ.

Lycopodium selago, <i>Lin.</i>		Lycopodium complanatum, <i>Lin.</i>
— annotinum, <i>Lin.</i>		— alpinum, <i>Lin.</i>
— clavatum, <i>Lin.</i>		

CORRIGENDA &c. ('Annals,' 1903.)

Vol. xi. p. 569.—For "*Berenicea prominens*, Lamouroux (Expos. méthod. des Genres de l'Ord. des Polypiers, 1821, p. 80, pl. lxxx. figs. 1, 2)," read *Berenicea annulata* (p. 81,

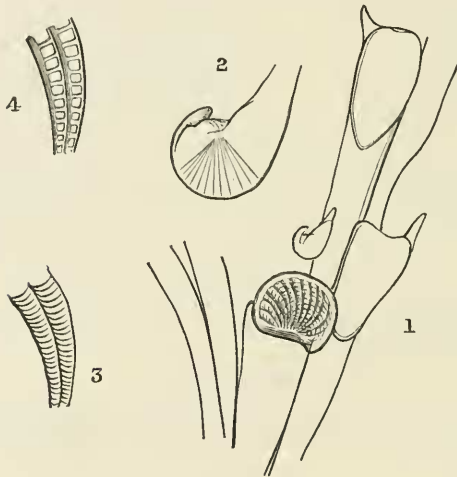
pl. lxxx. fig. 6). To anyone consulting the plate it must be obvious that the reference was, by some mistake which I am unable to account for, erroneous, and that the netted state of Hincks's *Chorizophora Brongniartii* is fig. 6. It follows that while the specific name *annulata* should, in my opinion, supersede that of *Brongniartii*, the generic name *Chorizophora* must be retained.

Vol. xi. p. 577.—For *Bugulopsis Peachii* read

*Bugula elongata*, Nordgaard.

1902. *Bugula elongata*, Nordgaard, "Die Bryozoen des westlichen Norwegens," Die Meeresfauna von Bergen, p. 140, pl. i. figs. 1-6.

The specimens which I referred to *Bugulopsis Peachii* must be transferred to the *Bugula elongata* of Nordgaard. The general resemblance of the two species is remarkable: in form of zoecia and oecia they are almost identical; moreover the peculiar sculpturing of the latter is of similar character. The chief point of



difference consists in the occasional development in *Bugula elongata* of a very minute avicularium, situated on the middle of the side of the zoecium, from which it usually hangs as it were backwards, as shown in the woodcut here given; but these avicularia are rarely developed, and there may be an entire zoarium without any avicularia. The other points in which the species

may be distinguished from *Bugulopsis* are that the form of growth in the latter is that of a little bush and the zoarium is charged with carbonate of lime; in *B. elongata* the growth is from a single stem giving forth branches for the most part dichotomously, and the zoarium is altogether chitinous, as is usual in the genus *Bugula*. These last differences were regarded by me as simply varietal, and it was not until my attention was directed to his species by Herr Nordgaard that I discovered on some of my specimens a few of the peculiar avicularia. It is probable, as suggested to me by Herr Nordgaard, that other records of *Bugulopsis Peachii* from Arctic localities may likewise be referable to his species; and I find that I have this form from as far south as the Bergen and Hardanger Fiords. In the adjoining woodcut, fig. 1 represents the zoœcia, oœcia, and avicularium of *Bugula elongata*, fig. 2 the avicularium more magnified, fig. 3 radii of the oœcium highly magnified, while fig. 4 illustrates the corresponding radii in the oœcium of *Bugulopsis Peachii* for comparison.

Vol. xi. pp. 580 & 581.—For *Kinekoskias* read *Kinetoskias*.

Vol. xi. p. 595.—“Genus *Oochilina*, gen. nov. Type *Oochilina* (*Membranipora*) *crassimarginata*, Hincks.” Mr. Waters kindly called my attention to the fact that M. F. Canu had in 1900 instituted a subgenus *Crassimarginitella*, with the same type, *Membranipora crassimarginata*, Hincks (Canu, “Révision des Bryozoaires du Crétacé figurés par d’Orbigny,” Bull. Soc. Géol. France, sér. 3, vol. xxviii. 1900, p. 369). This paper was not in my library when I wrote, and the Zool. Record, which I had consulted, contained no reference to the genus.

In this same paper of Canu the following genera may be mentioned as having reference to what I have written:—

“*Rhynchotella* (subgen.). Type *Membranipora rhynchota*, Busk,” p. 367, and “*Rhamphonotus*, Gray (*sic*). Type *Membranipora Flemingii*, Busk,” p. 417, should read *Rhamphonotus*, Norman. Type *Rhamphonotus minax*, Busk, = *rhynchota*.

At p. 373 a subgenus *Foratella* is instituted in which is placed among other species *Membranipora Lacroixii*, Audouin.

At p. 380 a genus *Nichtina* is formed with *Membranipora membranacea*, Linné, as its type.

At p. 382 we find *Pyripora*, d'Orbigny, 1847, type *P. catenaria*, Jameson. I have not seen d'Orbigny's paper of 1847, but in his 'Paléont. Française,' Terrains Crétacé, 1850-1852, p. 538, under the genus *Pyripora* there is no reference to the species in question, and the fossil species referred by Cunn to this genus would scarcely seem to be congeneric with *M. catenularia*.

Vol. xii. p. 100, lines 6 & 13.—For *Membraniporella*, Hincks, read *Membraniporella*, Smitt.

XLIV.—*Description of a new Species of Opisthostoma from North Borneo.* By EDGAR A. SMITH, I.S.O.

ALTOGETHER twenty-three species of this genus from the northern parts of Borneo have been described, and probably many other forms still remain to be discovered.

*Opisthostoma fraternum*, sp. n.

Testa dextrorsa, pyramidalis, anguste umbilicata, rufescens; anfractus  $6\frac{1}{2}$ , regulariter lento accrescentes, perconvexi, lamellis paucis, tenuibus, obliquis, in medio anfractuum in spinas productis, instructi, ultimus pone constrictus, dein descendens et subito ascendens atque retroversus, antice solutus, infra spinis excavatis cristatus; apertura subcircularis; peristoma obliquum, duplex, album, margine interno expanso, tubæformi, externo tenuissimo, aliquanto dilatato.

Diam. max. 2.75 mm.; alt. 2.25.

The identification of many of these minute objects is almost impossible or, at all events, very uncertain, from description or figures such as have as yet appeared. It is only by actual comparison of specimens that the differences become appreciable. The present species bears a closer resemblance to *O. concinnum*, Fulton, than to any other. It differs from it, however, in being a trifle smaller, having more convex and higher whorls, fewer lamellæ, and the outer peristome is less interrupted on the right side. The delicate oblique lamellæ are about fourteen in number upon the penultimate whorl and are produced at the middle into short hollow spines directed obliquely upwards. This row of spines is continued under the body-whorl, forming a crest, between the constriction and the peristome, of about six or seven spines. The distance of the solution of the anterior portion of the body-whorl is a trifle variable. Even under the microscope no spiral sculpture is traceable, but some feeble lines of growth may be observed.